

WHAT IS CLAIMED IS:

1. A device for detecting the presence of a transponder in its proximity, comprising:

-- an antenna;

5 -- pulse generation means;

-- means adapted to feed said antenna with said pulses;

-- means for measuring the damped oscillations of said antenna as a consequence of being fed with said pulses;

10 -- said means for measuring the damped oscillations of said antenna determining whether a transponder is present or not in the proximity of said antenna on the basis of the characteristics of said damped oscillations.

2. The device according to claim 1, wherein said device is a device for reading/writing said transponder and said antenna is the antenna of said read/write device.

15 3. The device according to claim 1, wherein said pulse generation means comprise a microprocessor or a microcontroller.

4. The device according to claim 1, wherein said means for measuring the damped oscillations of said antenna comprise a microprocessor or a microcontroller.

20 5. The device according to claim 1, wherein said means for feeding said antenna with said pulses comprise a microprocessor or a microcontroller.

6. The device according to claim 1, wherein said pulse generation means generate a series of synchronous pulses.

25 7. A method for detecting the presence of a transponder in the proximity of a device provided with an antenna, comprising the steps consisting in:
generating a series of pulses and feeding said antenna with said pulses;
detecting the damped oscillations of said antenna;
determining the presence/absence of said transponder on the basis of the characteristics of said oscillations.

30 8. The method according to claim 7, wherein said device provided with

an antenna is a device for reading/writing said transponder.

9. The method according to claim 7, wherein the step consisting in detecting the damped oscillations of said antenna comprises the step consisting in determining the amplitude of the damped oscillations of said
5 antenna.

10. The method according to claim 7, wherein the step consisting in detecting the damped oscillations of said antenna comprises counting the number of said damped oscillations whose amplitude exceeds a preset threshold, said number being lower if said transponder is in the vicinity of
10 said antenna with respect to when said transponder is not present.

11. The method according to claim 7, wherein the step consisting in feeding said antenna with said pulses comprises varying the number of said pulses and/or the amplitude of said pulses and/or the duration of said pulses so as to obtain damped oscillations of said antenna having a constant
15 amplitude in the absence of said transponder, regardless of the type of antenna and of the environmental conditions.

12. The method according to claim 7, wherein the step consisting in feeding said antenna with said pulses comprises varying the number and/or amplitude and/or duration of said pulses, so as to keep constant the number
20 of damped oscillations of said antenna.

13. The method according to claim 7, comprising the steps consisting in:
storing the average amplitude of said damped oscillations of the antenna detected over a given time interval;

comparing the stored average amplitude with the detected instantaneous
25 amplitude and detecting significant variations of said instantaneous amplitude that indicate the presence of said transponder.

14. The method according to claim 7, comprising the steps consisting in:
storing the average number of said damped oscillations of the antenna detected over a given time interval;

30 comparing said average number of damped oscillations with the detected

number of oscillations and detecting significant variations of said number of oscillations that indicate the presence of said transponder.